

REMARKS

The Office Action rejection of claims 11-13 & 15 as obvious under 35 USC 103 e) over Park et al ('944), in view of Kurosara et al (JP-'573), is respectfully traversed.

The Office Action rejection of claim 14 as obvious under 35 USC 103 a) over Park et al, '944) in view of U.S. P. '321) to Niikura et al, is respectfully traversed.

This is because applicants' above claims, including 11, as amended, recite in ¶ (h) *"means for applying voltage to said coil to impose magnetic field lines in said melt such that the flow of said radial electrical current crosses said magnetic field lines to impart a stirring force to said melt ..."*, which means is not suggested nor possible by a combination of the above two cited prior art references.

That is, Park et al disclose a crystal growth apparatus, which includes as a crucible, a reaction container 61, positioned inside a crystal (or quartz) reaction tube 60, in the high-temperature electric furnace 30, per Park et al's Figure 1.

To arrive at applicants' structure per claim 11, the Office Action states that it would be obvious to modify the Park et al structure by inserting the electrode taught by the Kurosara et al reference, into the crucible of Park et al, defined by the reaction container 61 and the reaction tube 60. That is, one would then apply electric current to such borrowed electrode and such current would then cross the magnetic field of Park et al, imparted by electromagnet 50, to apply a stirring force to the melt within such crucible and thus one would have a similar structure, asserts the Office Action, to that shown, for example, in applicants' Figure 2 and defined in applicants claim 11, including ¶ h), as amended.

That is, applicants' apparatus, e.g., of Figure 2, provides a central electrode in which the radial current flow crosses magnetic field lines to impart a stirring force to the melt, as indicated, e.g., in Figure 2.

Would not the apparatus proposed by the Office Action of the Kurosara electrode in the Park et al crucible accomplish this same electromagnetic stirring of the melt? Here's the problem. In applicants' Figure 2, the electrode and the graphite crucible, conduct electricity and form a closed-circuit. However, in the proposed combination of the Park et al and Kurosara components, only the electrode of Kurosara can conduct

electricity. Park's quartz crucible, defined by tubes and 60 & 61, does not electrically conduct and so the proposed hybrid structure of the prior art fails to perform the melt stirring function so readily provided by applicants' structure, e.g., per Figure 2 and as defined in claim 1, as amended.

That is, the proposed hybrid structure is not an equivalent of applicants' claimed structure since the former is incapable of electromagnetically stirring its melt.

As for the Office Action comment, in the first paragraph, top of page 4, that applicants' claim 11 is said to not recite a magnetic field which can enhance motion in the melt, the Examiner is referred to claim 11, ¶ h) for such wording.

The Office Action rejections in paragraphs 3, 4 & 5 of page 2, under 35 USC 102 (b), 35 USC 103 (a) and 35 USC 112, second paragraph, directed to applicants' claims 16-19, are respectfully traversed. As claims 16-19 have been canceled, the above rejections are believed to no longer apply.

As to new claim 20, crystals of GaSb are believed new, as noted in the specification on page 8, at lines 12-15, no art being cited to the contrary.

In view of the foregoing, the claims of record, as amended, are believed distinguished over the applied art and in condition for allowance.

In accordance with Section 714.01 of the M.P.E.P., the following information is presented in the event that a call may be deemed desirable by the Examiner: to Thomas C. Stover, (781) 377-3779.

Respectfully submitted,



Thomas C. Stover
Attorney for Applicant
Reg. No. 22,531